



PA-119/INFINITY

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
R. LEE ROBERTS et al. : Examiner: M. Ocampo
Serial No.: 08/935,365 : Group Art Unit: 1723
Filed: September 22, 1997 :
For: LOW PROFILE EXTRUDED :
UNDERDRAIN :

SUPPLEMENTAL APPEAL BRIEF

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TC 1100

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APPEAL BRIEF

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Dear Sir:

Applicants submit this Supplemental Appeal Brief to reinstate Applicants' appeal of the rejection of Claims 1 through 7, 18, 19 and 28 of the subject patent application. Applicants submit herewith a Petition for Extension of Time extending the time for filing the Supplemental Appeal Brief to May 15, 2001.

In support of their appeal Applicants state the following:

I. REAL PARTY IN INTEREST

The real party in interest is the assignee RG, Delaware, Inc. of 103 Foulk Road, Suite 202,

P. O. Box 1958, Wilmington, Delaware, Inc. 19899.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 8 through 17 and 20 through 27 have been withdrawn from consideration.

Claim 4 has been rejected under 35 USC § 112, second paragraph.

Claims 1 and 5 have been rejected under 35 USC § 102 as being anticipated by Roberts '765.

Claims 1 and 5 have been rejected under 35 USC § 102 as being anticipated by Berkebile.

Claims 1 through 5 have been rejected under 35 USC § 102 as being anticipated by Brown '388.

Claims 6, 7 and 28 have been rejected under 35 USC § 103 as being unpatentable over Brown '388 in view of Roberts '765 or Berkebile.

Claim 18 has been rejected under 35 USC § 103 as being unpatentable over the combination of Brown '388 and Brown '920.

Claim 18 has been rejected under 35 USC § 103 as being unpatentable over the combination of Berkebile and Brown '920.

Claim 19 has been rejected under 35 USC § 103 as being unpatentable over Brown '388 or Berkebile and Brown '920 and further in view of Eades et al.

IV. STATUS OF AMENDMENTS

No amendments after final rejection have been filed.

V. SUMMARY OF INVENTION

Applicants' invention, as recited in Claim 18, is directed to a novel and unobvious underdrain block for an underdrain system supporting a filter media bed in a liquid filtration system. The underdrain block includes an upper wall, side walls and a lower wall. These walls define an interior of the underdrain block. Three laterals are formed in the interior of the underdrain block. Two of the laterals are vertically oriented while the third lateral is horizontally oriented. *The two vertically oriented laterals divide the interior of the underdrain block into three sections of approximately equal size. The horizontal lateral intersects the two vertical laterals such that the horizontal lateral divides the interior of the underdrain block into six chambers comprising three upper chambers of approximately equal size and three lower chambers of approximately equal size.* A plurality of upper orifices extend through the upper wall of the underdrain block. A plurality of internal orifices extend through the horizontal lateral. This construction significantly reduces the complexity of the underdrain block design which in turn reduces the overall cost of manufacture. Further, an underdrain block formed in accordance with Applicants' invention has greater structural strength than underdrain blocks employing inclined lateral members in the interior thereof.

Applicants' invention, as recited in Claim 1, is an underdrain block for an underdrain system supporting a filter media bed in a liquid filtration system. The underdrain block includes

an upper wall, side walls and a lower wall. At least one lateral within the underdrain block extends between the upper wall and the lower wall. At least two chambers are formed within the underdrain block. Each chamber is defined by the lateral. A plurality of orifices are formed in the upper wall of the underdrain block. Further, a plurality of internal orifices are formed in the lateral. The underdrain block of Claim 1 is *jointless and extends substantially the length of a filter media supported by the underdrain block*. An underdrain block formed in accordance with Applicants' invention, as recited in Claim 1, is a significant improvement over previously known underdrain blocks. As explained in detail in the Specification, previously known underdrain blocks varied in length from two to four feet. (See Specification, page 3, lines 27 to 34) Due to the size of previously known underdrain blocks it was necessary to position numerous blocks end to end to form an underdrain lateral system which extended the length of the filter media bed. These joints lead to undesirable headloss. (See Specification, page 4, lines 10 to 26) Applicants' invention completely eliminates the joints formed between underdrain blocks positioned end to end. Accordingly, Applicants' invention does not suffer from the undesirable headloss of previously known underdrain blocks.

Applicants' invention, as recited in Claim 28, is directed to an underdrain block for an underdrain system supporting a filter media in a liquid filtration system. The underdrain block includes a plurality of walls integrally connected. At least one chamber within the underdrain block is defined by the walls. The underdrain block *is jointless and has a longitudinal length of at least five feet*. As explained in detail in the Specification, previously known underdrain blocks

varied in length from two to four feet. (See Specification, page 3, lines 27 to 34) Due to the size of previously known underdrain blocks it is necessary to position at least two blocks end to end to form an underdrain block as claimed by Applicants. Such a construction will lead to at least one joint and undesirable headloss attendant thereto. (See Specification, page 4, lines 10 to 26) Applicants' invention eliminates the need from a joint formed between underdrain blocks positioned end to end. Accordingly, Applicants' invention does not suffer from the undesirable headloss of previously known underdrain blocks.

VI. ISSUES PRESENTED FOR REVIEW

The following issues are presented by this Appeal:

1. Whether Applicants' invention recited in Claim 18 is unpatentable under 35 USC §103 over the combination of Brown '388 and Brown '920.
2. Whether Applicants' invention recited in Claim 18 is unpatentable under 35 USC §103 over the combination of Berkebile and Brown '920.
3. Whether Applicants' invention recited in Claim 19 is unpatentable under 35 USC §103 over Brown '388 or Berkebile and Brown '920 and further in view of Eades et al.
4. Whether Applicants' invention recited in Claims 1 and 5 is unpatentable under 35 USC §102 over Roberts '765.
5. Whether Applicants' invention recited in Claims 1 and 5 is unpatentable under 35 USC §102 over Berkebile.
6. Whether Applicants' invention recited in Claims 1 through 5 is unpatentable

under 35 USC §102 over Brown.

7. Whether Applicants' invention recited in Claims 6, 7 and 28 are unpatentable under 35 USC §103 in view of Brown '388 in view of Roberts '765 or Berkebile.

8. Whether Applicants' invention recited in Claim 4 fully complies with 35 USC §112, second paragraph.

VII. GROUPING OF CLAIMS

GROUP 1 - Claim 18.

GROUP 2 - Claim 19.

GROUP 3 - Claim 1 to 7.

GROUP 4 - Claim 28.

VIII. ARGUMENT

In this section of the Appeal Brief, Applicants first explain why the rejection of all pending based on prior art is in error. Subsequently, Applicants explain why Claim 4 fully complies with 35 USC §112, second paragraph.

A. THE EXAMINER HAS ERRED IN REJECTING CLAIMS 1 THROUGH 7, 18, 19 AND 28 BASED ON PRIOR ART

Applicants' invention, as set forth in Claims 1 to 7, 18, 19 and 28 clearly satisfy the novelty and obviousness requirement set forth in 35 USC §102 and §103. The Examiner has made numerous errors in rejecting all pending claims based on prior art. The Examiner's error

include: (1) failure to properly interpret the claims; (2) failure to consider the claimed invention in its entirety; (3) failure to provide any motivation or suggestion for the proposed modifications of the prior art in an attempt to satisfy the claimed invention; (4) viewing only isolated portions of the prior art and ignoring teachings negating the proposed modifications necessary to satisfy the claimed invention; and, (5) failure to recognize that the proposed combination of prior art references does not satisfy the claimed invention.

**1. Claim 18 is patentable over the combination of Brown '388 and
Brown '920**

Applicants incorporate by reference this section of the Amended Appeal Brief in its entirety.

**2. Claim 18 is patentable over the combination of Berkebile and
Brown '920**

The discussion of Brown '920 in Applicants' Amended Appeal Brief and its lack of applicability to Claim 18 is incorporated in its entirety herein by reference. Berkebile does not provide any of the teachings lacking in Brown '920 necessary to render obvious Claim 18. Specifically, Berkebile fails to teach or suggest an underdrain block which is divided into three upper sections of approximately equal size and two lower sections of approximately each size. Rather, Berkebile has three upper section and *only* two lower sections. This is due to the fact that Berkebile expressly teaches an underdrain block construction that has only one primary gas conduit. There is absolutely no motivation or suggestion to modify Berkebile such that it has three lower chambers let alone three lower chambers of equal size. Accordingly, Claim 18 is

patentable over the proposed combination of Berkebile and Brown.

**3. Claim 18 is patentable over Brown '388 or Berkebile and Brown '920
and further in view of Eades '659**

The lack of applicability of Brown '388, Brown '920 and Eades '659 as discussed in Applicants' Amended Appeal Brief is incorporated in its entirety herein by reference. Berkebile does not supply any of the deficiencies in the teachings of Brown '388, Brown '922 or Eades '659. For the foregoing reasons, Applicants respectfully submit that Claim 19 patentably defines over the prior art of record.

4. Claims 1 and 5 are patentable over Roberts '765

Roberts '765 cannot possibly anticipate either Claims 1 or 5 as each and every underdrain block has at least one joint. This is readily evident from Figure 2. Specifically, each underdrain block has a joint formed by the block 12 and the removable top section 44. Applicants' invention as recited in Claims 1 and 5 is a jointless underdrain structure. Further, Roberts '765 expressly states that the extrusions are cut into separate pieces to form underdrain blocks. See Col. 4, lines 36 to 47. Further, this passage of Roberts '765 clearly indicates that the filter bottom is formed of multiple underdrain blocks which will necessarily form a plurality of joints between each of the underdrain blocks. Applicants' invention avoids any such joints. For the foregoing reasons, Applicants respectfully submit that Claims 1 and 5 patentably define over Roberts '765.

5. Claims 1 and 5 are patentable over Berkebile

Berkebile does not anticipate Claims 1 or 5 as this underdrain block is specially formed to ensure that joints are formed between adjoining blocks. See Figure 1. The underdrain block disclosed by Berkebile includes a receiving collar 22 for permitting a snug fit between adjoining blocks. See Col. 5, lines 22 to 33. Accordingly, Berkebile cannot possibly anticipate Claim 1 which requires a jointless underdrain structure.

6. Claims 1 and 5 are patentable over Brown '388

Applicants hereby incorporates by reference the entirety of the discussion of why Brown '388 does not render obvious any pending claim. This is certainly applicable to the rejection of Claims 1 and 5 based on alleged anticipation by Brown '388, since a reference which does not render an invention obvious certainly cannot anticipate the same.

**7. Claims 6 through 7 and 28 patentably define over Brown '388
in view of Roberts '765 or Berkebile**

The lack of applicability of Brown '388 to Claims 6, 7 and 28 as discussed in Applicants' Amended Appeal Brief is incorporated herein by reference in its entirety. As for Roberts '765 and Berkebile, these secondary references do not supply the fatal deficiencies in the teaching of Brown '388. Roberts '765 specifically teaches cutting the extrusions into small underdrain blocks which are joined to form an underdrain structure. Hence, numerous joints are formed. This is contrary to Applicants' invention which is jointless. The same is true for Berkebile as it expressly discloses an underdrain block that is designed to receive another underdrain block. As such,

joints are necessarily formed. This is precisely what Applicants' invention is designed to avoid.

**B. THE EXAMINER HAS ERRED IN REJECTING CLAIM 4 UNDER 35 USC §
112**

Claim 4 fully complies with 35 USC § 112. The Examiner contention to the contrary is without merit. Claim 4 provides antecedent basis for the phrase "filter media bed" in the very first line with the phrase "a filter bed." The filter bed as evident from the preamble of Claim 1 includes filter media. Accordingly, Applicants respectfully submit that Claim 4 fully complies with 35 USC §112, second paragraph.

IX. CONCLUSION

For the foregoing reasons, Applicants respectfully submit that Claims 1 through 7, 18, 19 and 28 are patentable over the prior art of record. Accordingly, Applicants respectfully request that all grounds of rejection be reversed.


A check in the amount of \$445.00 is attached hereto to satisfy the government fee for the requested extension of time pursuant to 37 CFR §1.17(a)(3). It is believed that no additional fees are owing. However, should that determination be incorrect, the Patent Office Officials are

hereby authorized to charge Deposit Account No. 13-2759 for any fees which may be due. The undersigned is to be notified of any charges to the aforementioned deposit account.

Respectfully submitted,

Date:

5/15/01


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X. APPENDIX

1. An underdrain block for an underdrain system supporting a filter media in a liquid filtration system, the underdrain block comprising:

an upper wall, side walls, and a lower wall;

at least one lateral member within the underdrain block between the upper wall and the lower wall;

at least two chambers within the underdrain block, each chamber being defined by the lateral member;

a plurality of orifices in the upper wall of the underdrain block; and

a plurality of internal orifices in the lateral member;

wherein the underdrain block is jointless and extends substantially the length of a filter media supported thereby.

2. The underdrain block of claim 1 further comprising a conduit in the lower wall for an effluent to flow out of the underdrain and for water and air to flow into the underdrain.

3. The underdrain block of claim 1 further comprising a passageway between an end of at least one chamber of the underdrain block and a wall sleeve, said wall sleeve providing a conduit for effluent to flow out of the underdrain and for water and air to flow into the underdrain.

4. The underdrain block of claim 1 for use in a filter bed, wherein the underdrain block extends the length of the filter media bed.

5. The underdrain block of claim 1, wherein the internal orifices formed in the lateral

member of the underdrain block extends in the same direction as the orifices formed in the upper wall.

6. The underdrain block of claim 1, wherein the longitudinal length is at least 10 feet.

7. The underdrain block of claim 1, wherein the longitudinal length is at least 20 feet.

18. An underdrain block for an underdrain system supporting a filter media bed in a liquid filtration system, the underdrain block comprising:

an upper wall, side walls, and a lower wall, said walls defining an interior of said underdrain block;

three lateral members within the underdrain block comprising two vertical lateral members and one horizontal lateral member, said two vertical lateral members dividing said interior of the underdrain block into three sections of approximately equal size, said horizontal lateral member intersecting said two vertical lateral members such that said horizontal lateral member further divides the interior of the underdrain block into six chambers comprising three upper chambers of approximately equal size located above said horizontal lateral member and three lower chambers of approximately equal size located below said horizontal lateral member;

a plurality of upper orifices through the upper wall of the underdrain block; and

a plurality of internal orifices through the horizontal lateral member.

19. The underdrain block of claim 18 further comprising:

a plurality of air nozzles located in each section of the underdrain and each located at different lengths along the length of the underdrain, each air nozzle comprising: